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Subject: Re: Radium/Radiation PRGs/Cleanup Goals

I did get a request from Stuart, but it asked for decision levels at DOE sites.

In Region 10, Radium was an issue at Eastern Michaud Flats (Pocatello, Idaho), Monsanto (Soda Springs, Idaho) and Teledyne Wah Chang (Albany, Oregon). Eastern Michaud Flats had both phosphogypsum waste and elemental phosphorus slag. Monsanto had elemental phosphorus slag.

In general, the approach taken on these sites was risk-based (rather than using the 5 pCi/g UMTRCA ARAR). Cleanup decisions were based on a concentration, corresponding to E-4 risk, ABOVE the background radium concentration. At the Teledyne site, radon was also addressed for potential future construction.

The Teledyne Site was included as one of the case studies in the Environmental Law Institute research report "Chemical and Radiation Environmental Risk Management at the Crossroads" (October 2001).

Also in Region 10 is the Fremont National Forest Uranium Mines site in Oregon (also known as "White King/Lucky Lass" site). The ROD was completed in September 2001, and cleanup was essentially to background radium levels.

On the subject of phosphorus waste, I should mention that elemental phosphorus slag was a big issue in SE Idaho where it had been used widely in communities and incorporated into homes and other construction. For those circumstances, Region 10 did not apply CERCLA. Instead, we worked with the companies and the communities to draw up some voluntary guidelines which were explicitly and intentionally outside Superfund context. Those "Graded Decision Guidelines" were stated in terms of radiation dose and ranged from 100 mrem/year to 500 mrem/year, depending on circumstances. The full story on slag in Region 10 can be found at http://www.epa.gov/r10earth/offices/oec/idslag/doc/gdgs.htm.

There have, of course, been UMTRCA-type cleanups based on the 40CFR192 criteria, but I don't think any were done under a Superfund ROD. I would go to Region 8 for that perspective. Region 5 should have good info on radium cleanups in urban settings.

Jon Richards